

Course Description Form

1. Course Name:					
Clinical Pharmacy II					
2. Course Code:					
452 CpCp2					
3. Semester / Year:					
Second semester/ Fourth					
4. Description Preparation Date:					
02/2024					
5. Available Attendance Forms:					
On campus					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4 Hours /3 Units					
7. Course administrator's name (mention all, if/ more than one name)					
Assistant Professor. Dheyaa Jabbar Kadhim Diaa.kazem@copharm.uobaghdad.edu.iq Assistant Professor. Ehab Mudher Mikhael Ihab.maddr@copharm.uobaghdad.edu.iq					
8. Course Objectives					
Course Objectives		<ul style="list-style-type: none"> • The course provides students with the basic knowledge about pathophysiology, symptoms and aims of treatment. In addition to the basic knowledge on the drug's use, kinetics drug interactions, dose calculations, side effects, treatment algorithms and patient awareness. • The diseases of the following topics will be covered: some of (cardiovascular disorders, Respiratory disorders, Gastrointestinal Disorder, infectious Disorders, rheumatological Disorder and Endocrinologic Disorders) 			
9. Teaching and Learning Strategies					
Strategy		Lectures Seminars Simple quizzes Brainstorming questions			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Knowledge of the principle of clinical pharmacy and its areas of specialization	Introduction to the concept of clinical pharmacy- its activities and professional responsibilities.(including current state	Lectures. Discussions.	Simple quizzes.

			of clinical pharmacy in Iraq) .		
2	1	Identify the concept of pharmaceutical care and the procedures required to achieve the goals of the therapeutic process	overview of pharmaceutical care practice (the patient care process).	Lectures. Simple discussions.	Simple quizzes.
3	2	<p>1-Discuss common causes of anemia.</p> <p>2-Identify common signs and symptoms of anemia.</p> <p>3-Describe diagnostic evaluation required to determine the etiology of anemia.</p> <p>4-Develop a treatment regimen considering the underlying cause and patient-specific variables. Compare and contrast oral and parenteral iron preparations.</p> <p>Explain the optimal use of folic acid and vitamin B12 in patients with macrocytic anemia.</p> <p>Evaluate the proper use of epoetin and darbepoetin in patients with anemia caused by cancer chemotherapy or chronic kidney disease.</p> <p>Develop a plan to monitor the outcomes of pharmacotherapy for the treatment of anemia.</p> <p>Identify common signs and symptoms of sickle cell disease</p> <p>Develop a treatment regimen for sickle cell disease and its complications.</p>	Hematologic disorders: Anemia and sickle cell disease.	Lectures. Simple discussions.	Simple quizzes.

4	2	<p>1-Identify guideline-based treatment goals for patients with hypertension.</p> <p>2-Recognize underlying causes and contributing factors in the development of hypertension.</p> <p>3-Describe the appropriate measurement of blood pressure (BP).</p> <p>4-Classify BP levels after measurement.</p> <p>5-Recommend lifestyle modifications.</p> <p>6-Determine patient-centered pharmacotherapy for individuals with hypertension.</p> <p>7-Identify specific conditions and populations requiring special consideration when designing a treatment plan for hypertension.</p> <p>8-Construct an appropriate monitoring plan to assess hypertension treatment</p>	Hypertension.	Lectures. Simple discussions.	Simple quizzes.
5	2	<p>1. Identify risk factors for the development of ischemic heart disease (IHD).</p> <p>2. Differentiate between the pathophysiology of chronic stable angina and acute coronary syndromes (ACS).</p> <p>3. Recognize symptoms and diagnostic criteria of IHD in a specific patient.</p> <p>4. Compare and contrast the diagnostic criteria of IHD and ACS.</p>	Ischemic heart diseases	Lectures. Simple discussions.	Simple quizzes.

		<p>5. Identify treatment goals of stable ischemic heart disease (SIHD).</p> <p>6. Identify appropriate lifestyle modifications and pharmacologic therapy to address each treatment goal.</p> <p>7. Design an appropriate treatment regimen for the management of SIHD based on patient-specific information.</p> <p>Formulate a monitoring plan to assess effectiveness and adverse effects of a SIHD drug regimen.</p>			
6	2	<p>1. Classify heart failure (HF) syndrome types into HF with reduced ejection fraction (HFrEF), HF with preserved ejection fraction (HFpEF), HF with mid-range ejection fraction (HFmrEF), and HF with recovered ejection fraction (HFrecEF).</p> <p>2. Differentiate between the common underlying etiologies of HF, including ischemic, nonischemic, and idiopathic causes.</p> <p>3. Describe the pathophysiology of HF as it relates to neurohormonal activation of the renin-angiotensin-aldosterone system, sympathetic</p>	Heart failure.	Lectures. Simple discussions.	Simple quizzes.

	<p>nervous system, and endogenous counterregulatory vasodilatory peptide systems.</p> <p>4. Identify signs and symptoms of HF and classify a given patient by New York Heart Association Functional Classification and American College of Cardiology/American Heart Association Heart Failure Stage.</p> <p>5. Discuss and modify the goals of therapy for a patient with acute and/or chronic HF.</p> <p>6. Create a strategy for the nonpharmacologic management of a patient with HF that includes patient education.</p> <p>7. Develop an evidence-based pharmacologic treatment and monitoring plan for a patient with chronic HFrEF.</p> <p>8. Design a pharmacologic treatment and monitoring plan for a patient with acute HF.</p> <p>9. Formulate a therapeutic management plan for a patient with HFpEF.</p>			
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7	1	<p>1-Outline the risk factors for developing peripheral arterial disease.</p> <p>2-Explain the role of atherosclerosis in the pathophysiology of peripheral arterial disease.</p> <p>3- Design an appropriate treatment regimen for the management of peripheral arterial disease.</p>	Peripheral vascular diseases.	Lectures. Simple discussions.	Simple quizzes.
8	2	<ol style="list-style-type: none"> 1. Describe the pathophysiology and clinical presentation of acute and chronic asthma. 2. List the treatment goals for asthma. 3. Identify environmental factors associated with worsening asthma control. 4. Discuss the factors to consider when choosing an inhaled drug delivery device for a patient. 5. Recommend an asthma medication regimen for an adult patient based on symptoms. 6. Compare the preferred asthma reliever and controller regimens for children, adolescents, and adults. <p>Describe the purpose of an individualized asthma action plan.</p>	Asthma.	Lectures. Simple discussions.	Simple quizzes.
9	1	<p>1-Describe the pathophysiology of chronic obstructive pulmonary disease (COPD).</p> <p>2-Assess a patient for signs and symptoms of COPD.</p>	Chronic obstructive pulmonary disease (COPD).	Lectures. Simple discussions.	Simple quizzes.

		<p>3-List the treatment goals for a patient with COPD.</p> <p>4-Design an appropriate COPD maintenance treatment regimen based on patient-specific data.</p> <p>5-Design an appropriate COPD exacerbation treatment regimen based on patient-specific data.</p> <p>6-Develop a monitoring plan to assess effectiveness and adverse effects of pharmacotherapy for COPD.</p> <p>7-Formulate an appropriate education plan for a patient with COPD</p>			
10	2	<ol style="list-style-type: none"> 1. Discuss the incidence of diabetes mellitus (DM). 2. Distinguish clinical differences in type 1, Latent Autoimmune Diabetes of Adulthood, type 2, and gestational diabetes. 3. List screening and diagnostic criteria for DM. 4. Discuss therapeutic goals for blood glucose (BG) and blood pressure (BP) for a patient with diabetes. 5. Recommend nonpharmacologic therapies, including meal planning and physical activity, for patients with diabetes. 6. Compare oral agents used in treating diabetes by their mechanisms of action, 	Diabetes mellitus & Diabetic ketoacidosis (DKA) .	Lectures. Simple discussions.	Simple quizzes.

		<p>time of action, side effects, contraindications, and effectiveness.</p> <p>7. Select appropriate insulin therapy based on onset, peak, and duration of action.</p> <p>8. Discuss the signs, symptoms, and treatment of hypoglycemia.</p> <p>9. Define <i>diabetic ketoacidosis</i> and discuss treatment goals.</p> <p>10-Develop a comprehensive therapeutic monitoring plan for a patient with diabetes based on patient-specific factors.</p>			
11	2	<p>1. Recognize differences between ulcers induced by <i>Helicobacter pylori</i> (<i>H. pylori</i>), nonsteroidal anti-inflammatory drugs (NSAIDs), and stress-related mucosal damage (SRMD) in terms of risk factors, pathogenesis, signs and symptoms, clinical course, and prognosis.</p> <p>2. Identify desired therapeutic outcomes for patients with <i>H. pylori</i>-associated and NSAID-induced ulcers.</p> <p>3. Select an appropriate <i>H. pylori</i> eradication regimen that considers patient-specific factors and approaches to</p>	Peptic ulcer disease.	Lectures. Simple discussions.	Simple quizzes.

		<p>improve regimen adherence.</p> <p>4. Determine the appropriate management for a patient taking a nonselective NSAID who is at high risk for ulcer-related gastrointestinal (GI) complications (eg, GI bleed) or who develops an ulcer.</p> <p>5. Utilize an algorithm for the evaluation and treatment of a patient with signs and symptoms suggestive of an <i>H. pylori</i>-associated or NSAID-induced ulcer.</p> <p>Given patient-specific information and a prescribed treatment regimen, develop a monitoring plan for drug therapy to eradicate <i>H. pylori</i> or treat an active NSAID-induced ulcer or GI complication</p>			
12	1	<p>1-Assess risk factors for developing an active tuberculosis (TB) infection.</p> <p>2-Design appropriate antimicrobial regimens for the treatment of latent TB infection.</p> <p>3-Design an appropriate therapeutic plan for a patient with active TB disease.</p> <p>4-Distinguish among the diagnostic tests used for patients potentially infected with TB.</p>	Tuberculosis	Lectures. Simple discussions.	Simple quizzes.

		<p>5-Determine appropriate monitoring parameters to evaluate the efficacy and safety of an active drug regimen for active TB.</p> <p>6-Describe potential adverse reactions associated with TB medications.</p> <p>7-Select patients for whom therapeutic drug monitoring (TDM) may be valuable and identify the necessary laboratory monitoring parameters for patients on anti-TB medications.</p>			
13	1	<p>1-Discuss the pathophysiology of central nervous system (CNS) infections and the impact on antimicrobial treatment regimens.</p> <p>2-Describe the signs, symptoms, and clinical presentation of CNS infections.</p> <p>3-List the most common pathogens causing CNS infections and identify risk factors for infection with each pathogen.</p> <p>4-State the goals of therapy for CNS infections.</p> <p>5-Outline the initial management strategies for CNS infections</p>	Infective meningitis	Lectures. Simple discussions.	Simple quizzes.
14	2	<p>upper respiratory tract infection</p> <p>1. List common bacteria that cause acute otitis media (AOM), acute bacterial rhinosinusitis</p>	Respiratory tract infections	Lectures. Simple discussions.	Simple quizzes.

		<p>(ABRS), and acute pharyngitis.</p> <p>2. Explain the pathophysiology of and risk factors for AOM, ABRS, and streptococcal pharyngitis.</p> <p>3. Identify clinical signs and symptoms associated with AOM, ABRS, streptococcal pharyngitis, and the common cold.</p> <p>4. List treatment goals for AOM, ABRS, streptococcal pharyngitis, and the common cold.</p> <p>5. Develop a treatment plan for a patient with an upper respiratory tract infection (URI) based on patient specific information.</p> <p>6. Create a monitoring plan for a patient with a URI based on patient-specific information and the treatment regimen.</p> <p>7. Formulate appropriate educational information for patients about URIs and proper antibiotic use</p> <p>Lower respiratory tract infection</p> <p>1-List the common pathogens that cause community-acquired pneumonia (CAP), ventilator-associated pneumonia (VAP), and hospital-acquired pneumonia (HAP).</p> <p>2-Explain the pathophysiology of</p>			
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		<p>pneumonia and associated host defenses.</p> <p>3-List the signs and symptoms associated with CAP, HAP, and VAP.</p> <p>4-Identify patient and organism factors required to guide the selection of a specific antimicrobial regimen for an individual patient.</p> <p>5-Design an appropriate empirical antimicrobial regimen based on patient-specific data for an individual with CAP, HAP, and VAP.</p> <p>6-Design an appropriate antimicrobial regimen based on both patient- and organism-specific data.</p> <p>7-Develop a monitoring plan based on patient-specific information for a patient with one of the three categories of pneumonia.</p> <p>8-Apply the complete Patient Care Process to caring for patients with any type of pneumonia.</p> <p>9-Formulate appropriate educational information to be provided to a patient with pneumonia.</p> <p>10-Explain prevention of pneumonia via immunization and include who the appropriate patient groups are for receiving the various vaccines.</p>			
15	1	1. Describe the epidemiology and clinical presentation of commonly encountered	GIT infections	Lectures. Simple discussions.	Simple quizzes.

		<p>gastrointestinal (GI) infections.</p> <p>2. Summarize common risk factors associated with the development of a GI infection.</p> <p>3. Given a patient with a GI infection, develop an individualized treatment plan.</p> <p>4. Outline the impact of widespread antimicrobial resistance on current treatment recommendations for GI infections.</p> <p>5. Discuss the effect of host immunosuppression on the risk of disease complications and treatment strategies associated with GI infections.</p> <p>6. Educate patients on appropriate prevention measures of GI infections, including vaccinations.</p>			
16	1	<p>1 .Recognize major risk factors for developing gout in a given person.</p> <p>2 .Develop a pharmacotherapeutic plan for a patient with acute gouty arthritis or uric acid nephropathy that includes individualized drug selection and monitoring for efficacy and safety.</p> <p>3 .Identify patients for whom maintenance therapy for gout and hyperuricemia is warranted.</p> <p>4 .Select an appropriate drug to reduce serum uric acid (SUA) levels in</p>	Gout and hyperuricemia	Lectures. Simple discussions.	Simple quizzes.

		<p>patients with gout, and outline a plan for monitoring efficacy and toxicity.</p> <p>5 .Educate patients on appropriate lifestyle modifications to help prevent gouty arthritis attacks.</p> <p>6 .Identify patients at risk for tumor lysis syndrome and develop a rational plan to prevent this syndrome</p>			
17	2	<p>OA</p> <p>1 .Identify pathophysiologic mechanisms and risk factors associated with OA.</p> <p>2 .Recognize the clinical presentation of OA.</p> <p>3 .Determine the goals of therapy for individual patients with OA.</p> <p>4 .Formulate a rational nonpharmacologic plan for patients with OA.</p> <p>5 .Recommend a pharmacologic plan for treating OA, taking into consideration patient-specific factors.</p> <p>6 .Modify an unsuccessful treatment strategy for OA.</p> <p>7 .Develop monitoring parameters to assess pharmacotherapy's effectiveness and adverse effects for OA.</p> <p>RA</p> <p>1 .Describe the pathophysiology of RA, emphasizing the specific immunologic components.</p>	Rheumatoid arthritis (RA) and osteoarthritis (OA)	Lectures. Simple discussions.	Simple quizzes.

		<p>2 .Discuss the comorbidities associated with RA.</p> <p>3 .Recognize the typical clinical presentation of RA.</p> <p>4 .Create treatment goals for a patient with RA.</p> <p>5 .Compare the available pharmacotherapeutic options, selecting the most appropriate regimen for a given patient.</p> <p>6 .Propose a patient education plan that includes nonpharmacologic and pharmacologic treatment measures.</p>			
18	1	<p>1 .Identify risk factors that predispose patients to osteoporosis.</p> <p>2 .Describe the pathogenesis of fractures.</p> <p>3 .List the criteria for diagnosis of osteoporosis.</p> <p>4 .Recommend appropriate lifestyle modifications to prevent bone loss.</p> <p>5 .Compare and contrast the effect of available treatment options on fracture risk reduction.</p> <p>6 .Recommend an appropriate treatment regimen for a patient with osteoporosis and develop a monitoring plan for the selected regimen.</p>	Osteoporosis and other metabolic bone disease.	Lectures. Simple discussions.	Simple quizzes.
19	1	1 .Differentiate the causes and development of infective endocarditis (IE).	Infectious Endocarditis	Lectures. Simple discussions.	Simple quizzes.

		<p>2 .Identify the clinical presentation and laboratory evaluation for IE.</p> <p>3 .Assess diagnostic criteria used to evaluate a patient suspected of having IE.</p> <p>4 .Describe the most likely causative organisms of IE, particularly in specific patient populations.</p> <p>5 .Develop appropriate pharmacologic treatment recommendations for patients with IE.</p> <p>6 .Define appropriate patient populations requiring prophylactic treatment, and differentiate appropriate drug regimens.</p>			
20	1	<p>1-To provide antimicrobial recommendations for surgical prophylaxis for patients undergoing surgical procedures taking into consideration the type of surgery and most common organisms involved.</p> <p>2-To optimize antimicrobial use and patient outcome in prevention of surgical site infections and prevent the emergence of resistance among bacteria.</p>	Surgical antibiotic prophylaxis	Lectures. Simple discussions.	Simple quizzes.
21	1	<p>1 .Determine the diagnostic criteria for significant bacteriuria.</p> <p>2 .Interpret the signs and symptoms of urinary tract infections (UTIs) and differentiate those of upper</p>	Urinary tract infection (UTI)	Lectures. Simple discussions.	Simple quizzes.

	<p>versus lower urinary tract disease.</p> <p>3 .Identify the organism responsible for the majority of uncomplicated UTIs.</p> <p>4 .Assess the laboratory tests that help in diagnosing patients with UTI.</p> <p>5 .Recommend appropriate drug, dose, and duration for uncomplicated and complicated UTI prophylaxis and empiric treatment.</p> <p>6 .Evaluate and select therapy for uncomplicated and complicated UTIs based on specific urine culture results and patient characteristics</p>			
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11. Course Evaluation				
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20 midterm exam + 20 Laboratory + 60 Final exam				
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12. Learning and Teaching Resources				
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Required textbooks (curricular books, if any)	Pharmacotherapy: A pathophysiologic approach. Pharmacotherapy: principles and practice. Applied therapeutics. Clinical pharmacy and therapeutics. Pharmacotherapy handbook. ACCP updates in therapeutics.
Main references (sources)	Pharmacotherapy: A pathophysiologic approach. Pharmacotherapy: principles and practice. Applied therapeutics. ACCP updates in therapeutics.
Recommended books and references (scientific journals, reports...)	Pharmacotherapy: A pathophysiologic approach. Pharmacotherapy: principles and practice.
Electronic References, Websites	Electronic books and review articles.